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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/532,864	12/12/2005	Seigo Kano	Q86626	9317	
23373	7590	12/11/2007	EXAMINER		
SUGHRUE MION, PLLC			PHAN, HAU VAN		
2100 PENNSYLVANIA AVENUE, N.W.			ART UNIT	PAPER NUMBER	
SUITE 800					
WASHINGTON, DC 20037			3618		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/532,864

Applicant(s)

KANO ET AL.

Examiner

Hau V. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Acknowledgment*

1. The amendment filed on 10/26/2007 has been considered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klemen et al. (6,527,659) in view of Morisawa et al. (5,904,631).**

Klemen et al. in figures 1-7, disclose a hybrid driving unit, comprising: an input shaft for inputting motive power from an internal combustion engine (14), an output shaft (13) disposed on an axis in line with the input shaft and interlocked with driving wheels, a first electric motor (26) disposed on the axis comprising a stator and a rotor. Klemen et al. also disclose a power splitting planetary gear (24) disposed on the axis having a first rotary element coupled with the input shaft, a second rotary element coupled with the rotor of the first electric motor and a third rotary element coupled with the output shaft. Klemen also disclose a second electric motor (28) disposed on the axis having a stator and a rotor. Klemen et al. disclose a transmission (10) disposed on the axis and shifting and transmitting revolution of the rotor of the second electric motor

to the output shaft. The stators of the first and second electric motors are fixed to the casing member; and the first electric motor, the power splitting planetary gear, the second electric motor and the transmission are disposed on the axis so that the first electric motor and the second electric motor adjoin each other on the axis.

Klemen et al. fail to show the first electric motor, the power splitting planetary gear, the second electric motor and the transmission are stored in a casing member while being disposed in line on the axis. Klemen also disclose the power splitting planetary gear in single pinion planetary gear, but not in double pinion planetary gear.

Morisawa et al. in figure 9, teach a hybrid vehicle having an engine (102), a first motor, a second motor and a power splitting planetary gear having a double planetary gear. The first electric motor, the power splitting planetary gear, the second electric motor and the transmission are stored in a casing member while being disposed in line on the axis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hybrid vehicle of Klemen et al. with the hybrid vehicle having a first electric motor, a power splitting planetary gear, a second electric motor storing in a casing member while being disposed in line on the axis as taught by Morisawa et al. in order to reduce a size of the whole power output and to perform highest power output of the splitting planetary gear efficiency.

Regarding claim 2, Morisawa et al. disclose the casing member comprising a plurality of connected partial cases in a body in the axial direction and the first and second electric motors are stored in one of the partial cases.

Regarding claim 3, Morisawa et al. disclose the casing member having a joint \*

section of the partial cases at the part where the transmission and the power splitting planetary gear are stored (as shown in figure 2).

Regarding claim 4, Morisawa et al. disclose the partial case storing the first and second electric motors that is divided into a front part close to the internal combustion engine and to a rear part by a partition and the radial size of a motor storage section of the front part is larger than that of a motor storage section of the rear part.

Regarding claim 5, Klemen et al. disclose in that partitions extending from the casing member support the both sides of the rotors of the first and second electric motors through an intermediary of bearing members; wherein and-one of the partitions is located between the first electric motor and the second electric motor having bearing members supporting the rotors of the first and second electric motors, respectively.

Regarding claim 6, Klemen et al. disclose the input shaft that is supported by the inner peripheral face of the rotor of the first electric motor through an intermediary of bearing members provided on the outer peripheral face of the input shaft.

Regarding claims 7, 13 and 22, Klemen et al. disclose the first electric motor, the second electric motor, the transmission and the power splitting planetary gear, which are disposed in order from the side closer to the internal combustion engine.

Regarding claims 8, 14, Klemen et al. disclose the input shaft that is coupled with the first rotary element through the inner periphery of the first electric motor, the second electric motor and the transmission, and the an output element of the transmission is coupled with the output shaft through the outer periphery of the power splitting planetary gear.

Regarding claims 9, 15, Klemen et al. disclose the power splitting planetary gear that is comprised a single pinion planetary gear. The input shaft is coupled with a rear side of a carrier of the single pinion planetary gear through the inner periphery of the power splitting planetary gear. The output shaft is coupled with the output element of the transmission via a ring gear of the single pinion planetary gear and the rotor of the first electric motor is coupled with a sun gear of the single pinion planetary gear through the inner periphery of the second electric motor and the transmission (as shown in figures 2-5).

Regarding claim 10, Klemen et al. disclose the power splitting planetary gear comprising a single pinion planetary gear. The input shaft is coupled with the transmission side of a carrier of the single pinion planetary gear. The output shaft is coupled with a sun gear of the single pinion planetary gear and with the output element of the transmission through the outer periphery of the power splitting planetary gear and the rotor of the first electric motor is coupled with a ring gear of the single pinion planetary gear through the inner periphery of the second electric motor and the transmission.

Regarding claims 15-16, Klemen et al. disclose the power splitting planetary having a single pinion planetary gear. The input shaft is coupled with the second electric motor side of a carrier of the single pinion planetary gear. The output shaft is coupled with the output element of said transmission and with a sun gear of the single pinion planetary gear. The rotor of the first electric motor is coupled with the ring gear of the single pinion planetary gear through between the second electric motor and the power

splitting planetary gear; and the rotor of the second electric motor is coupled with an input element of the transmission through the outer periphery of the power splitting planetary gear.

Regarding claim 19, Klemen et al. disclose the transmission having a planetary gear unit.

Regarding claim 20, Klemen et al. disclose the transmission having at least four shifting elements. The first shifting element is coupled with the rotor of the second electric motor, the second shifting element is coupled with the output shaft, and the transmission has braking elements which are capable of fixing the third and fourth shifting elements to the casing member, respectively.

Regarding claim 21, Klemen et al. disclose the planetary gear of the transmission having a Ravigneaux type planetary gear and a carrier of the Ravigneaux type planetary gear is coupled with the output shaft.

Regarding claim 23, Klemen et al. disclose the input shaft is coupled with the first rotary element, and an output element of the transmission is coupled with the output shaft disposed through the inner periphery of the power splitting planetary gear, the first electric motor, the second electric motor and the transmission.

Regarding claim 24, Klemen et al. disclose the transmission, the second electric motor, the first electric motor and the power splitting planetary gear are disposed in order from the side closer to the internal combustion engine.

Regarding claim 25, Klemen et al. disclose the input shaft that is coupled with the first rotary element through the inner periphery of the transmission, the second electric

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motor, the first electric motor and the power splitting planetary gear, and the output element of the transmission is coupled with the output shaft through between the input shaft and the inner periphery of the transmission, the second electric motor, the first electric motor and the power splitting planetary gear.

Regarding claim 26, Klemen et al. disclose the hybrid driving unit that is arranged such that the input shaft is coupled with an output shaft of the internal combustion engine, a propeller shaft is coupled with the output shaft of the internal combustion engine, and the output shaft of the internal combustion engine, the input shaft, the output shaft of the hybrid driving unit and the propeller shaft are disposed approximately on one and the same axis.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau V. Phan whose telephone number is 571-272-6696. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on 571-272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hau V Phan  
Primary Examiner  
Art Unit 3618

*Hau V Phan*  
*12/6/07*